GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA

UNSTARRED QUESTION NO:3484
ANSWERED ON:18.08.2003
WORLD BANK AIDED NATIONAL AGRICULTURAL TECHNOLOGY PROJECT
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Will the Minister of AGRICULTURE be pleased to state:

(a) whether the World Bank aided National Agricultural Technology Project is likely to terminate in December, 2003;

(b) if so, the details thereof;

(c) whether remarkable achievements have been made under this programme in the agro sector;

(d) if so, the details thereof;

(e) whether keeping in view its success the Government have taken up the matter with the World Bank to extend the project for a further one or two years; and

(f) if so, the details thereof and if not, the steps taken or being taken by the government to support such projects?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI HUKUMDEO NARAYAN YADAV)

(a) Yes Sir, as at present

(b) The project is scheduled for completion on 31st December 2003, according to its original plan.

(c) Yes, Sir.

(d) As per Annexure.

(e) Yes, Sir.

(f) The proposal for extension of the NATP project for one year w.e.f. 1.1.2004 to 31.12.2004 has already been sent to the World Bank through Department of Economic Affairs, Ministry of Finance.

Annexure

SALIENT ACHIEVEMENTS UNDER NATP

A number of adoptable technologies with emphasis on themes like Biotechnology, Natural Resources Management, Post Harvest Technology and IPM have been developed under the four modes of Research i.e. Production System research, Mission Mode Research, Team of Excellence & Competitive Grant programme. On farm trials & and innovative approaches to transfer of technology also received a high degree of emphasis. The following are some salient achievements

NATURAL RESOURCES MANAGEMENT

- Reduced and Zero tillage improved yield and input use efficiency in the rice-wheat system. Zero till-cum fertilizer drill allows farmers to establish a wheat crop almost immediately after rice harvest. About 0.3 million ha area of wheat has been sowed with Zero till drill during this year that has saved Rs. 75 crore to the farmers.

- Adoption of improved Biasi system resulted in a higher yields (4.1 t/ha), net returns (Rs. 12097) and BC ratio (2.6) as compared to farmers practice (3.2 t/ha: Rs. 5,787 & 1.6).

- A project on Rain-Water Management through on- farm reservoirs in Chhatisgarh, M.P, Orissa and Jharkhand demonstrated that 40-60% of the surplus run-off could be re-cycled for rice crop during drought period or for the subsequent rabi crop. In spite of long dry spell experienced during Kharif 2002, on an average more than 1000 m3 of water was harvested per hectare in the refuges of medium and low lands. It resulted in an increase of 100-176 per cent cropping intensity in such areas.

- A Slit type Furrow Opener has been developed to plant sugarcane immediately after harvesting wheat crop in dry and untilled field

followed with irrigation. A Seeder Cutter Planter has also been developed to plant sugarcane simultaneously with wheat sowing.

- Under under the Jai Vigyan National Science and Technology Mission onHousehold Food and Nutritional Security, Over 6000 farm families at 47 locations in 15 states in tribal, backward and hilly areas have been brought under this mission mode project to improve their economic condition by supplying quality seed of improved varieties of life support crops and planting material of fruits and vegetable crops, improved breeds of poultry (fertile eggs), piggery (piglets), sheep and fisheries. This is resulting into increase in income (15-50%), living standards of people and also the employment opportunities. Impact of these activities is becoming a source of inspiration for other farmers to get involved in the various programmes.

- A scientific and economically viable shrimp health management package has been developed.

- A commercial level hatchery production technology for marine ornamental fishes, the clownfish Amphiprion sebae and damselfish Neopomacentrus cyanomos, N.nemurus Pomacentrus caeruleus , P.pavo and Chrysiptera unimaculata and was developed and is being patented, which can pave the way for the development of hatchery produced marine ornamental fish trade in India which has a high export potential.

AGRICULTURAL BIOTECHNOLOGY

- Biodegradable Poly-lactide-co-glycolide capsules for incorporating the the vaccine against the dreaded Ranikhet disease virus (RDF) have been developed for easy and low cost immunization in poultry.

- Transgenic plants of Tobacco, Muskmelon and groundnut capable of producing anti-rabies edible vaccines have been developed. These vaccines can be administered easily, with very low cost and can be stored at room temperature.

- Diagnostic kits for the PPR (Pestae des Petit Ruminants) virus disease of small-ruminants including diagnostic kits for viral diseases of potato and banana have been developed. Linkages are being developed for commercializing the technology.

POST HARVEST TECHNOLOGY AND VALUE ADDITION

- Processing method has been developed for preservation of coconut inflorescence sap as CIS granules and toffee. This can increase the farmers income to about RS.6, 00,000/ha/annum and generate additional employment opportunity in farming sector to the tune of 3000 mandays/ha/annum.

- Rice bran is now a well-known source of oil. Now a technology of protein extraction from rice bran meal by microwave treatment followed by homogenization have been developed for utilisation of rice bran and rice bran meal in food products. This will further increase the value of rice- bran as a source of protein.

- Pigments from mulberry (Morus alba), melastoma (Melastoma malabathricum), banana male bud, jamun (Sizygium cuminii), roselle (Hibiscus sabdarifa), Basella rubra and annatto (Bixa orelana) have been isolated to be used as technologically viable and healthy plant sources of food colorants.

- A Mobile Starch Extractor Unit was modified.Recovery of starch was 95, 75 and 40% for Cassava, Sweet Potato and Amorphophallus tubers respectively.

- Referral Laboratories for Meat & Meat Products, and Fish and fish Product. Quality standard Technology have been established which will allow monitoring of quality of animal and fish products to ensure quality food for domestic use and establish high degree of reputation for, export of those commodities and, development of trained human resources.

- The pilot studies revealed that fuel grade alcohol can be produced from the stalks and grains of sweet sorghum. A contract farming model has been worked out on 1000 ha in Belgam district of Karnataka where the farmers will grow the sweet sorghum crop and M/s. Renuka Sugars, Belgaum will buy the crop for extraction of alcohol.

- A technology for packing ready-to-eat fish preparations in retortable pouches has been developed. The packing technology can be very useful for popularizing fish products, and for the use of the personnel working in difficult terrains.

INTEGRATED PESTS MANAGEMENT

- Organic formulation of the bio-agent Verticillium chlamydosporium BIOVERT was developed, for the management of root- knot nematodes on brinjal, tuberose and acid lime under field conditions. This will boost the adoption of biocontrol methods for nematode management.

- Integration of botanical herbicide Coleus amboinicus / aromaticus with the insect bio-control agent Neochetina eichhorniae / bruchi was found to be successful in controlling the weed water hyacinth efficiently in an eco-friendly manner.

- Phytoplasma-free budwood banks of peaches in Himachal Pradesh have been developed in the University campuses in Solan and Hamirpur. This will make establishment of phytroplan tree orchards possible.

- The desi cotton especially Abroreums are relatively resistant to insect pests and offer scope for shift from tetraploid hirsutums. The Abrboreum variety (MD-12463) produced 20 q /ha yield along with 27 mm staple length and 36-38% GOT.

- IPM modules for different crops (Cotton, Pigeonpea, Chickpea, Groundnut, Cabbage, Tomato Apple and Mango) in an area of 690

hectares involving 464 farm facilities have been validated. Production of afew crops (Cabbage, Tomato and Chickpea) without pesticidal sprays are success stories. The pesticide load in IPM plots of cotton is reduced as compared to non-IPM plots.

- Two new antimicrobials viz. n-butanol extracts of Myristica fregroas and Withania somnifera have been identified, to be effectively used as the alternatives for antibiotics against Vibrio infections in the culture of the fish grouper Epinephelus tauvina.

HUMAN RESOURCE DEVELOPMENT

- A number of training programmes were conducted in frontier areas of biotechnology, post harvest managements, integrated pest management, water management agricultural biodiversity and social sciences.

- Training programmes were organized benefiting about 10, 00,000 farmers and farm women.

TECHNOLOGY DISSEMINATION

- Agricultural Technology Management Agencies (ATMAs) in 28 districts acorsss the seven States, namely, Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Punjab and Orissa have been established. StateAgriculture Management Extension and Training Institutes (SAMETI) at State level have been fully operationalised in seven States.

- The integrated technology transfer system has succeeded in catering to the farmers` needs related to agriculture, horticulture, animal husbandry and other enterprises in a holistic way through ATMAs. The public extension system is being transformed into bottom-up mode of planning moving towards becoming demand driven and farmer responsive. The research-extension linkages have been strengthened to a great deal following the new institutional arrangements and the Strategic Research & Extension Plans(SREPs). The new arrangements have been found to be successful in meeting need of farmers at AES (Agro Eco System) level to the farmers, with respect to diversification and intensification.

- Decentralization of planning process down to the district level is working successfully. The institution of Farm Information and Advisory Centres (FIACs) via Farmers Advisory Committees (FACs) has started working as afeedback mechanism. Farmer Organizations have began to get involved in collective marketing and technology dissemination. A substantive social capital is being developing through them. In some of the ATMA districts an effective partnership between private sector, public organizations and the farmer groups has started taking shape.

- The Agriculture Technology Information Centres (ATIC) are a novel concept of single window information and service centres for the farmers.During the year, 1.53 lakh farmers visited the 44 ATICs. Besides, providing diagnostic services, 1026 tonnes of improved seeds, 7.03 lakh planting material, 1.29 lakh packets of bio-fertilizers and bio-pesticides were made available to the farmers.

ON FARM DEMOSTRATION TRIALS

- A large number of on-farm trials were organized for testing location specific IPM modules on Pigeonpea, Chickpea, Groundnut, Sunflower and Safflower. The use of IPM resulted in saving of 25-30% of the input cost.

- Overall, about 10, 000 on farm trials / demonstration have been carried out under NATP

WOMEN`S EMPOWERMENT

- Women in tribal, backward and hilly areas have been empowered with implements to reduce drudgeries in farm operations. Women have been also empowered with technologies related to post-harvest agro-processing and value addition.

- To reduce the drudgery of women in agricultural operations commonly performed by the female workers of Kerala, a model anthropometer has been developed for quick and reliable recording of the physical parameters. Extension trainings programmes on the operation and maintenance of agricultural machinery like tractors, power tillers, harvesters and threshers were conducted to introduce improved implements and machinery among the female workers of the region.

AGROBIODIVERSITY

- Under Jai Vigyan National Science and Technology mission on conservation of Agro-biodiversity besides 62,363 collections, 1,16,568 characterization, 59,611 conservation and 4,50,000 documentation of huge germplasm, a few trait specific germplasms like: scented types in rice, salinity tolerant type in wheat, high sweet type in matira, powdery mildew tolerant in ber a bael, a pickling type mango with specific aroma etc. were collected, which after characterization will facilitate the improvement in productivity (quantity and quality) of farming systems in the country.

- Hybrids: 24 Hybrids of different crops (Rice - 8, Maize - 4, Sunflower - 4, Pearl millet - 3, Castor - 1, Cotton - 4, Sorghum - 2) with improved quality, high yield, (15-20%) and disease resistance have been developed and released. A few hybrids in vegetable crops (tomato, brinjal, chilli and onion) have been developed having multiple disease resistance, yield increase (15-20%) and quality.